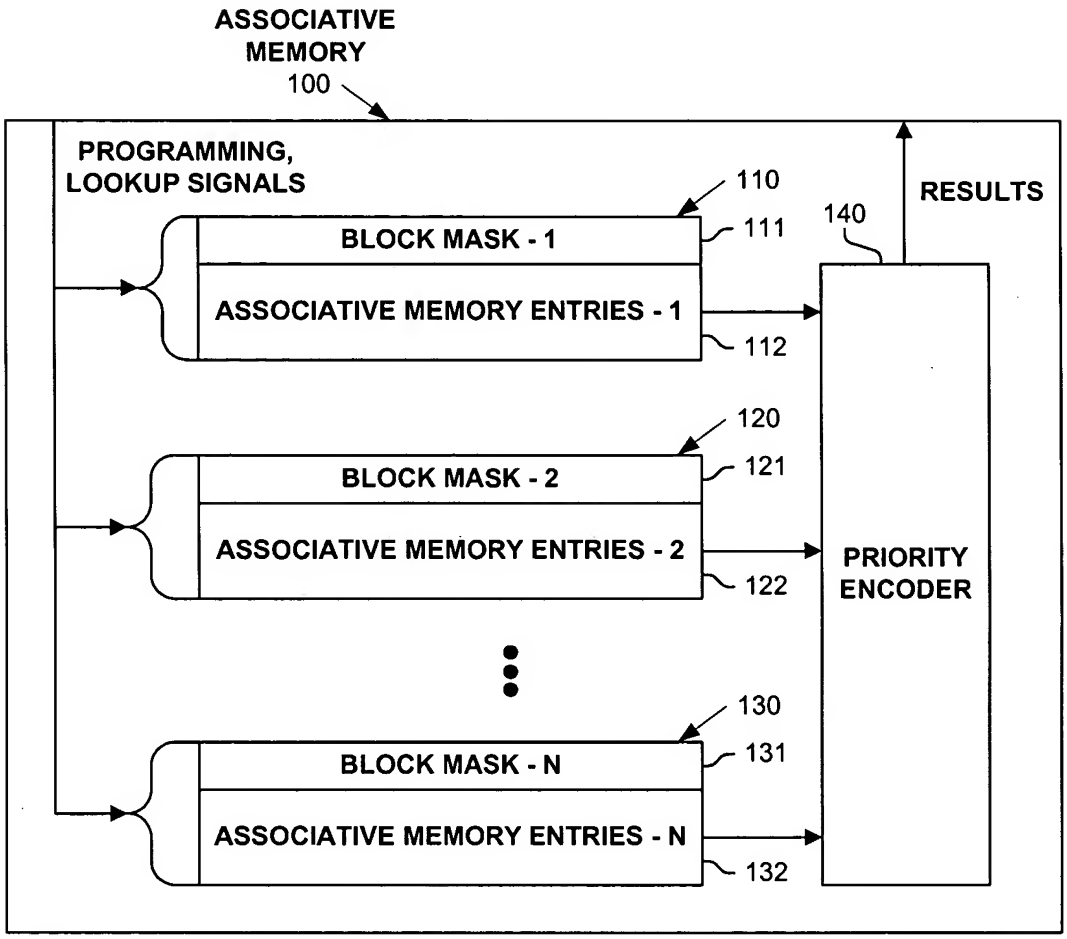
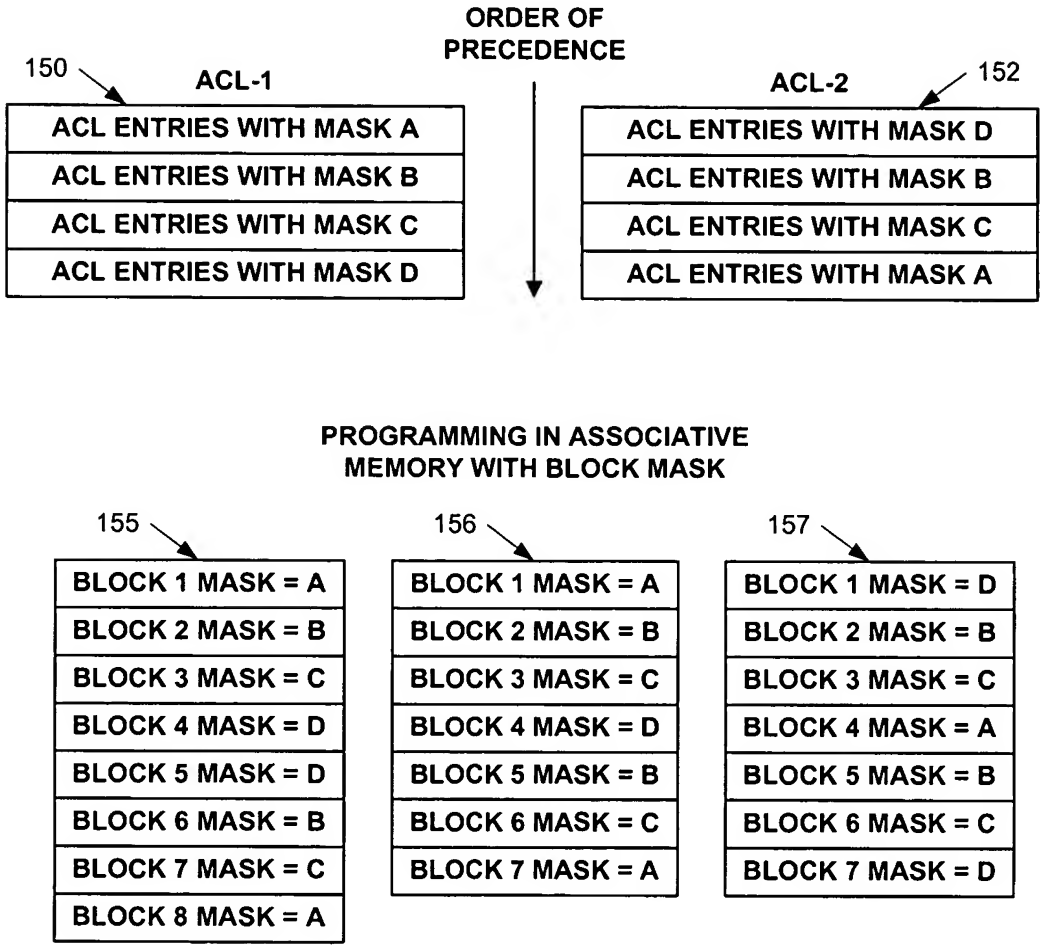


PRIOR ART
FIGURE 1A



PRIOR ART
FIGURE 1B

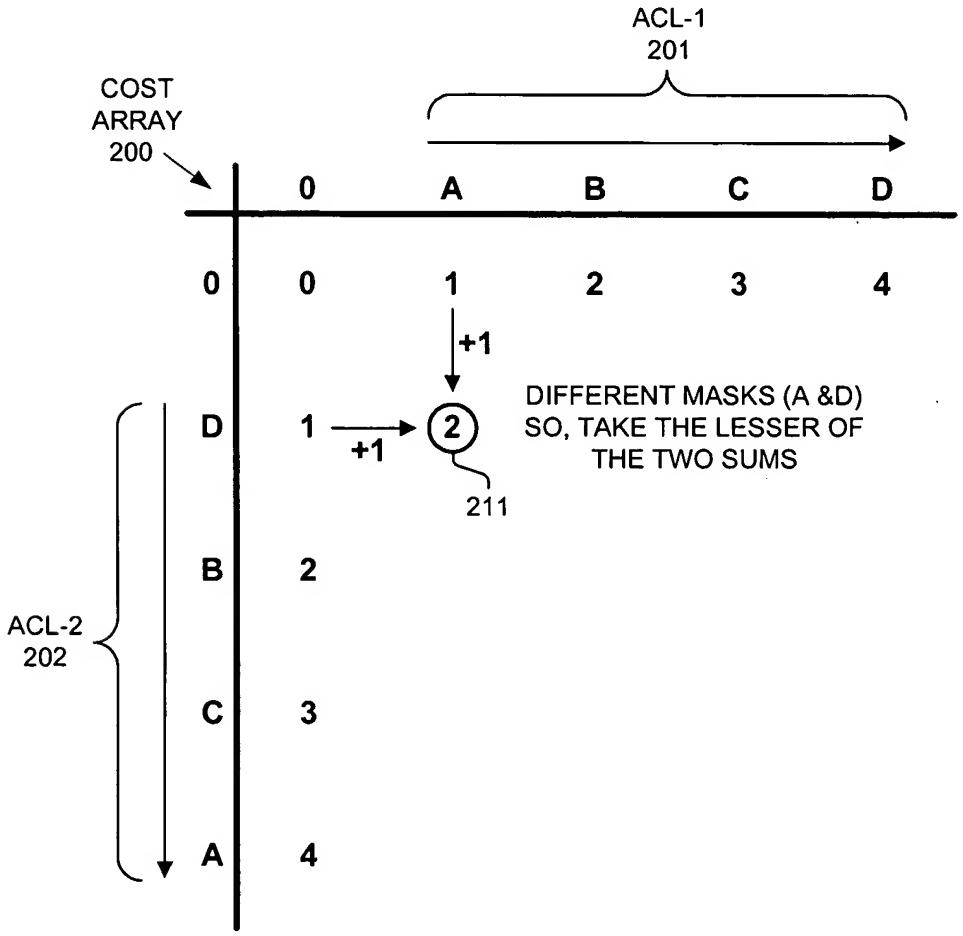

ACL-1
201
COST
ARRAY
200
0
A
B
C
D
0
0
1
2
3
4
+1
DIFFERENT MASKS (A &D)
SO, TAKE THE LESSER OF
THE TWO SUMS
D
1
+1
2
211
B
2
ACL-2
202
C
3
A
4

FIGURE 2A

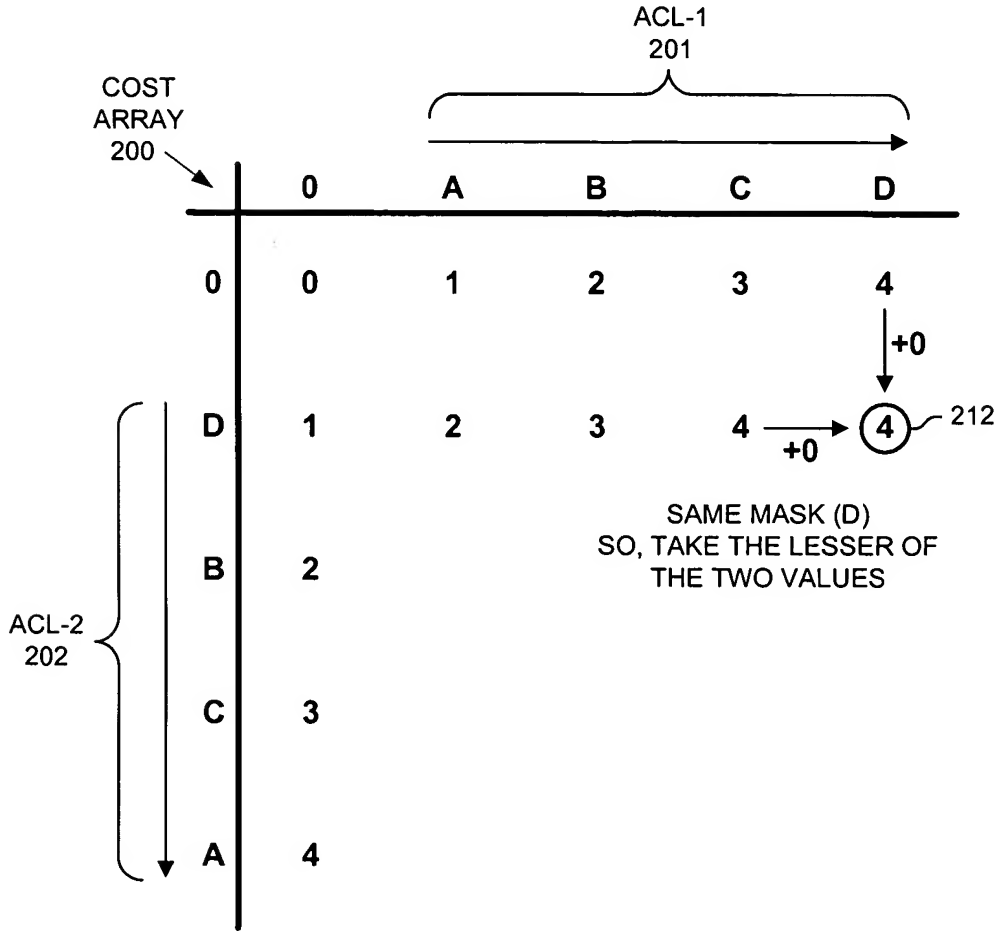

ACL-1
201
COST
ARRAY
200
0
A
B
C
D
0
0
1
2
3
4
+0
D
1
2
3
4
+0
4
212
SAME MASK (D)
SO, TAKE THE LESSER OF
THE TWO VALUES
B
2
ACL-2
202
C
3
A
4

FIGURE 2B

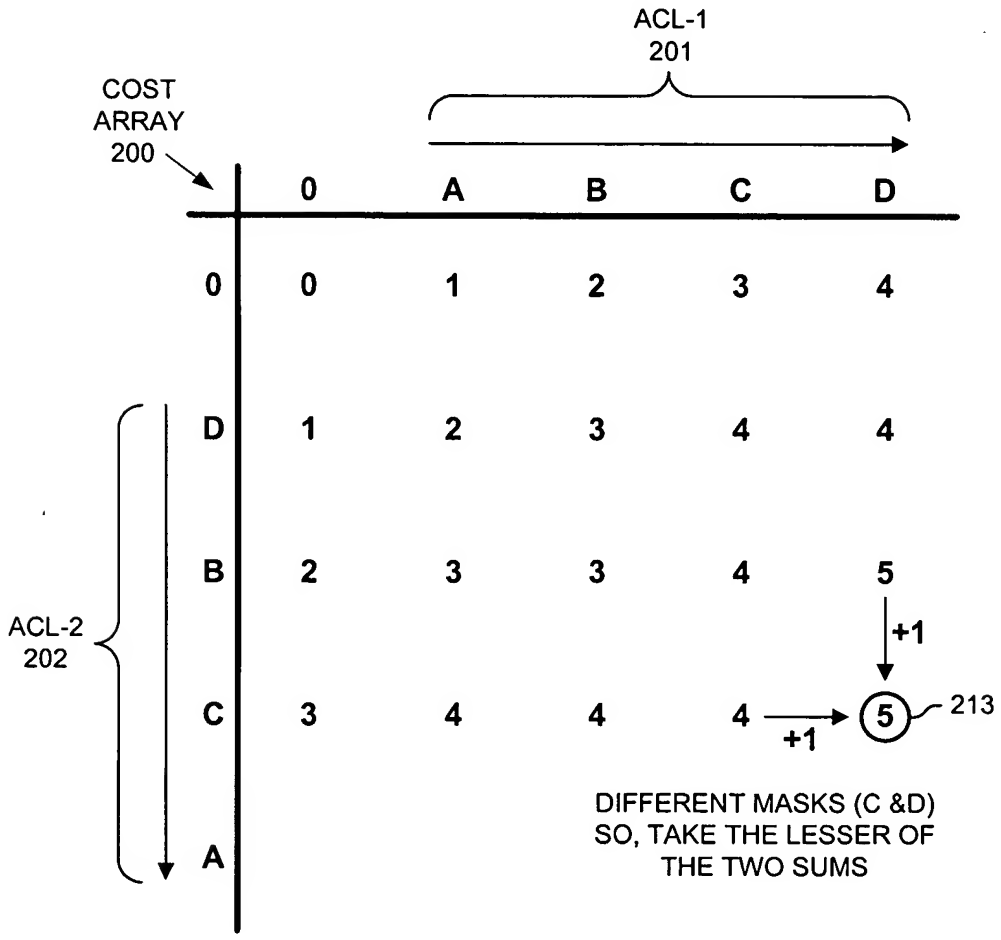

ACL-1
201
COST
ARRAY
200
0
A
B
C
D
0
0
1
2
3
4
D
1
2
3
4
4
B
2
3
3
4
5
+1
ACL-2
202
C
3
4
4
4
+1
5
213
A
DIFFERENT MASKS (C &D)
SO, TAKE THE LESSER OF
THE TWO SUMS

FIGURE 2C

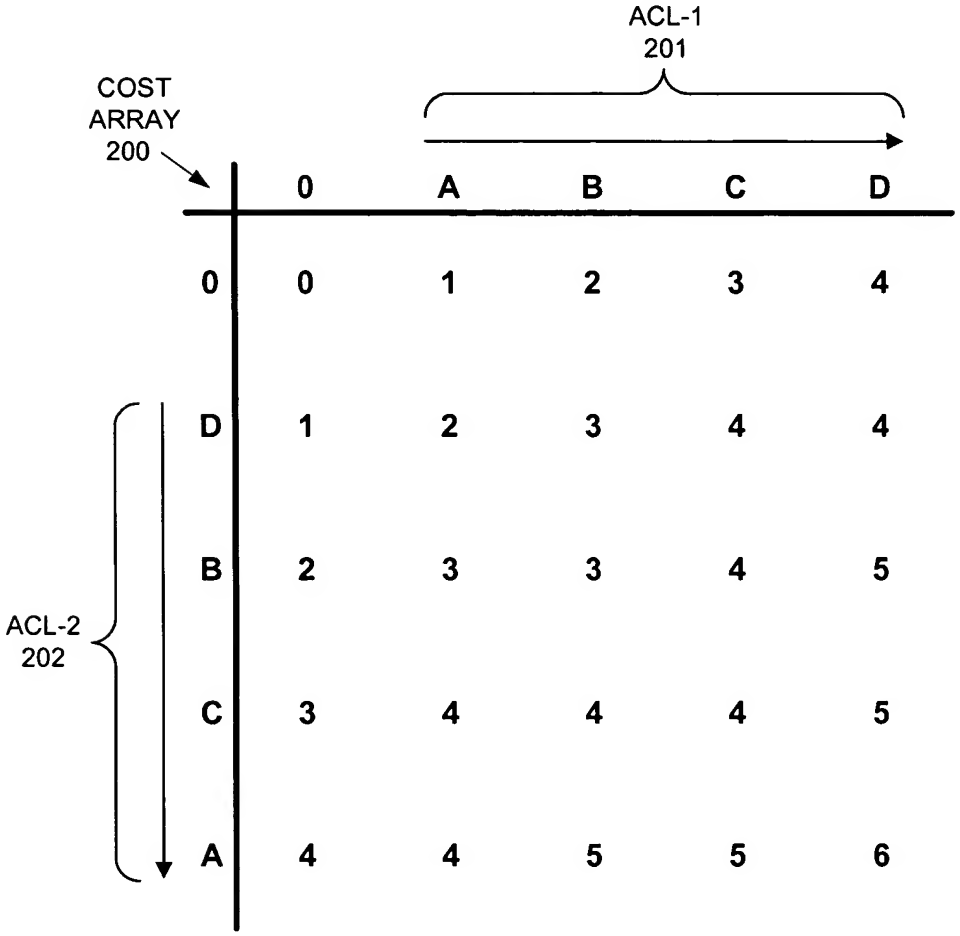

ACL-1
201
COST
ARRAY
200
0
A
B
C
D
0
0
1
2
3
4
D
1
2
3
4
4
B
2
3
3
4
5
ACL-2
202
C
3
4
4
4
5
A
4
4
5
5
6

FIGURE 2D

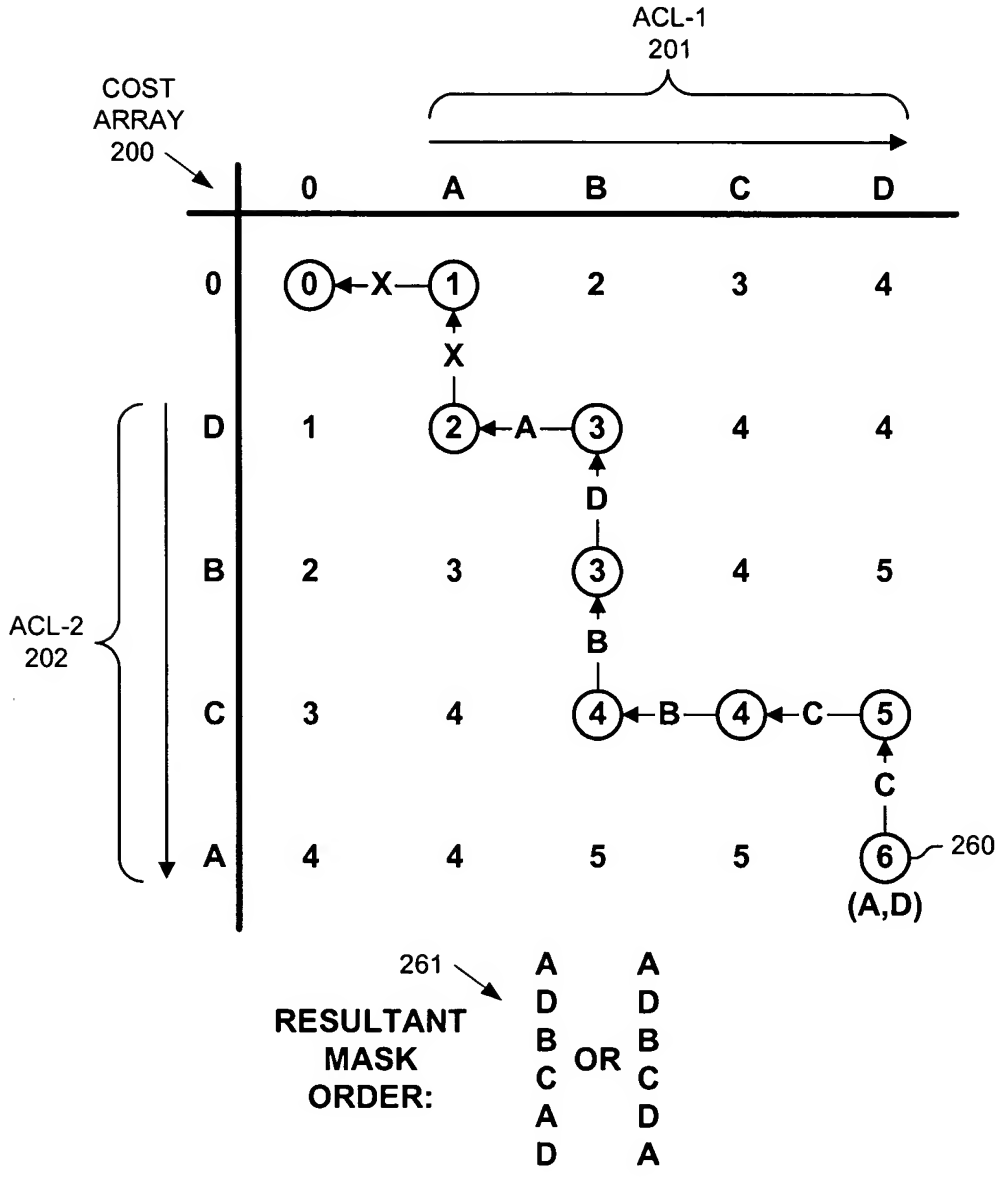

ACL-1
201
COST
ARRAY
200
0
A
B
C
D
ACL-2
202
260
(A,D)
261
RESULTANT
MASK
ORDER:
OR

FIGURE 2E

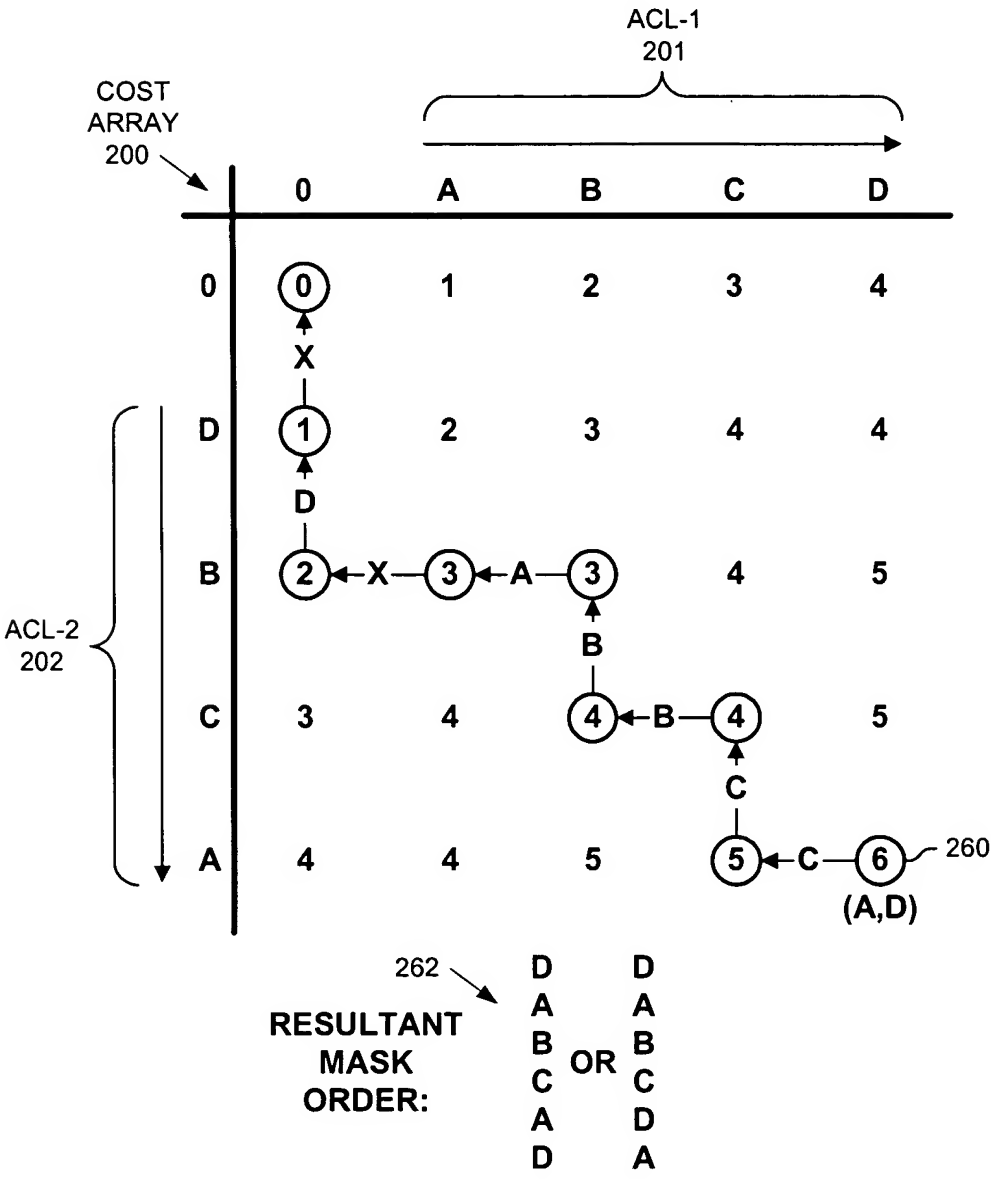

ACL-1
201
COST
ARRAY
200
0
A
B
C
D
0
1
2
3
4
X
D
B
5
A
C
ACL-2
202
260
(A,D)
262
RESULTANT
MASK
ORDER:
D A B C A D
OR
D A B C D A

FIGURE 2F

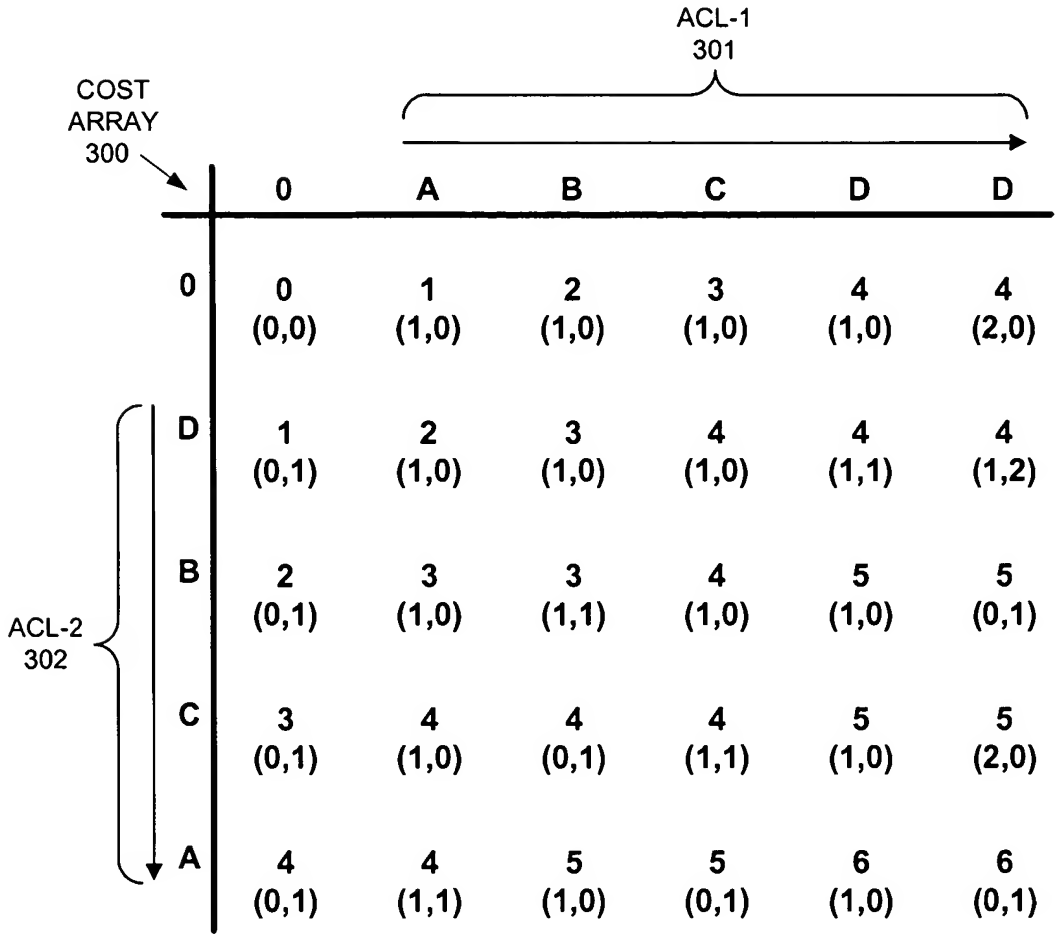

ACL-1
301
COST
ARRAY
300
ACL-2
302
0
A
B
C
D
D
0
0 (0,0)
1 (1,0)
2 (1,0)
3 (1,0)
4 (1,0)
4 (2,0)
D
1 (0,1)
2 (1,0)
3 (1,0)
4 (1,0)
4 (1,1)
4 (1,2)
B
2 (0,1)
3 (1,0)
3 (1,1)
4 (1,0)
5 (1,0)
5 (0,1)
C
3 (0,1)
4 (1,0)
4 (0,1)
4 (1,1)
5 (1,0)
5 (2,0)
A
4 (0,1)
4 (1,1)
5 (1,0)
5 (0,1)
6 (1,0)
6 (0,1)

FIGURE 3A

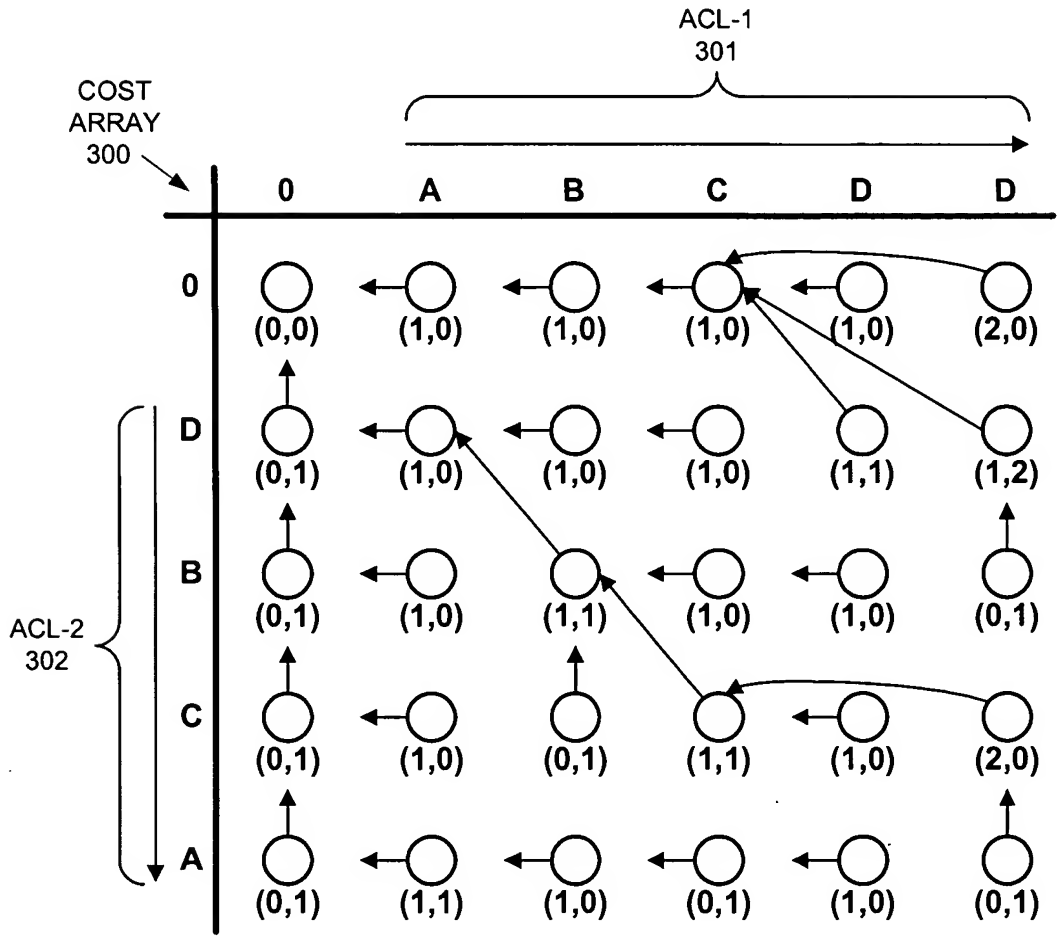

ACL-1
301
COST
ARRAY
300
0
A
B
C
D
D
0
D
B
C
A
ACL-2
302
(0,0) (1,0) (1,0) (1,0) (1,0) (2,0)
(0,1) (1,0) (1,0) (1,0) (1,1) (1,2)
(0,1) (1,0) (1,1) (1,0) (1,0) (0,1)
(0,1) (1,0) (0,1) (1,1) (1,0) (2,0)
(0,1) (1,1) (1,0) (0,1) (1,0) (0,1)

FIGURE 3B

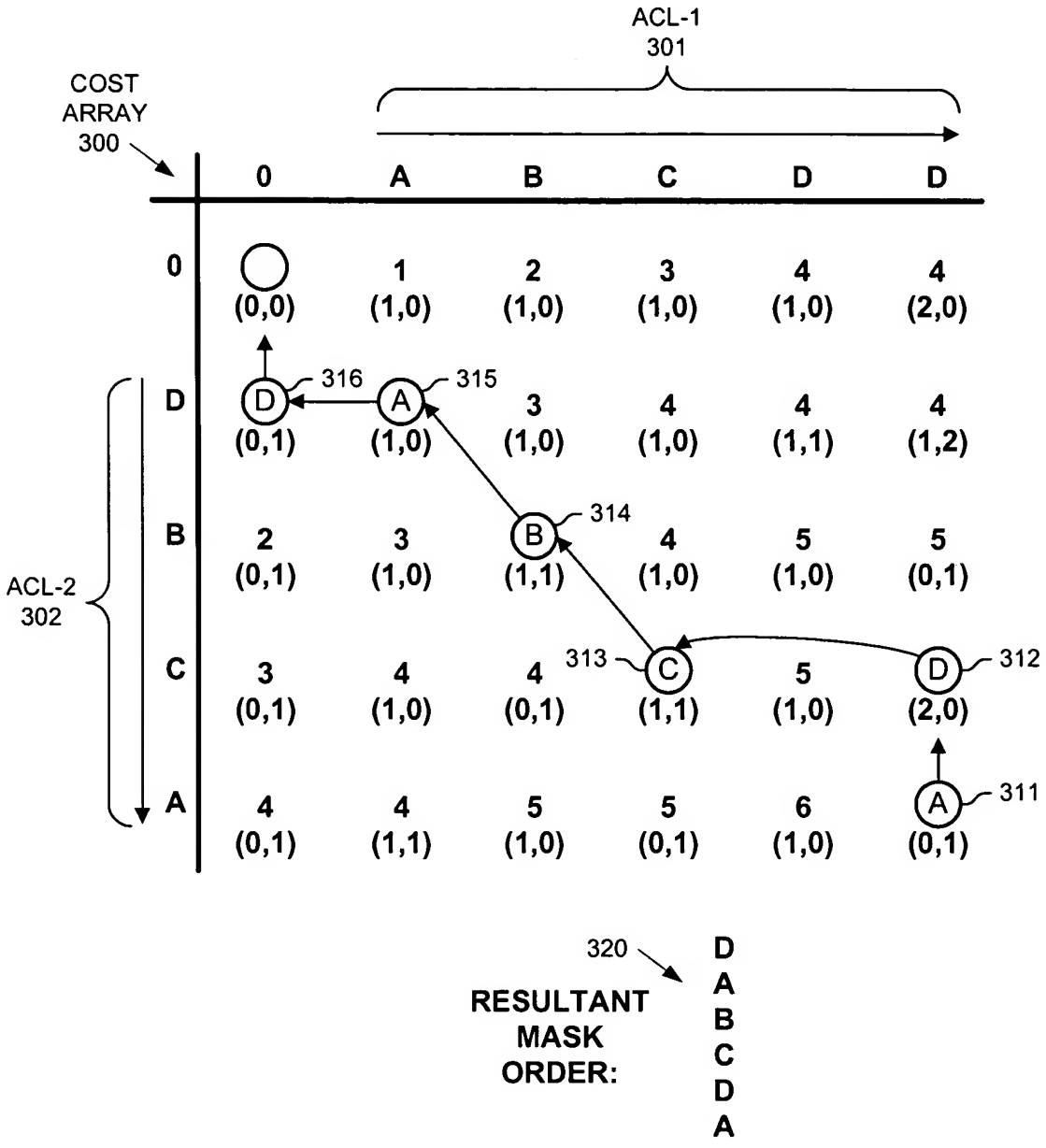

ACL-1
301
COST
ARRAY
300
0
A
B
C
D
D
ACL-2
302
316
315
314
313
312
311
320
RESULTANT
MASK
ORDER:
D
A
B
C
D
A

FIGURE 3C

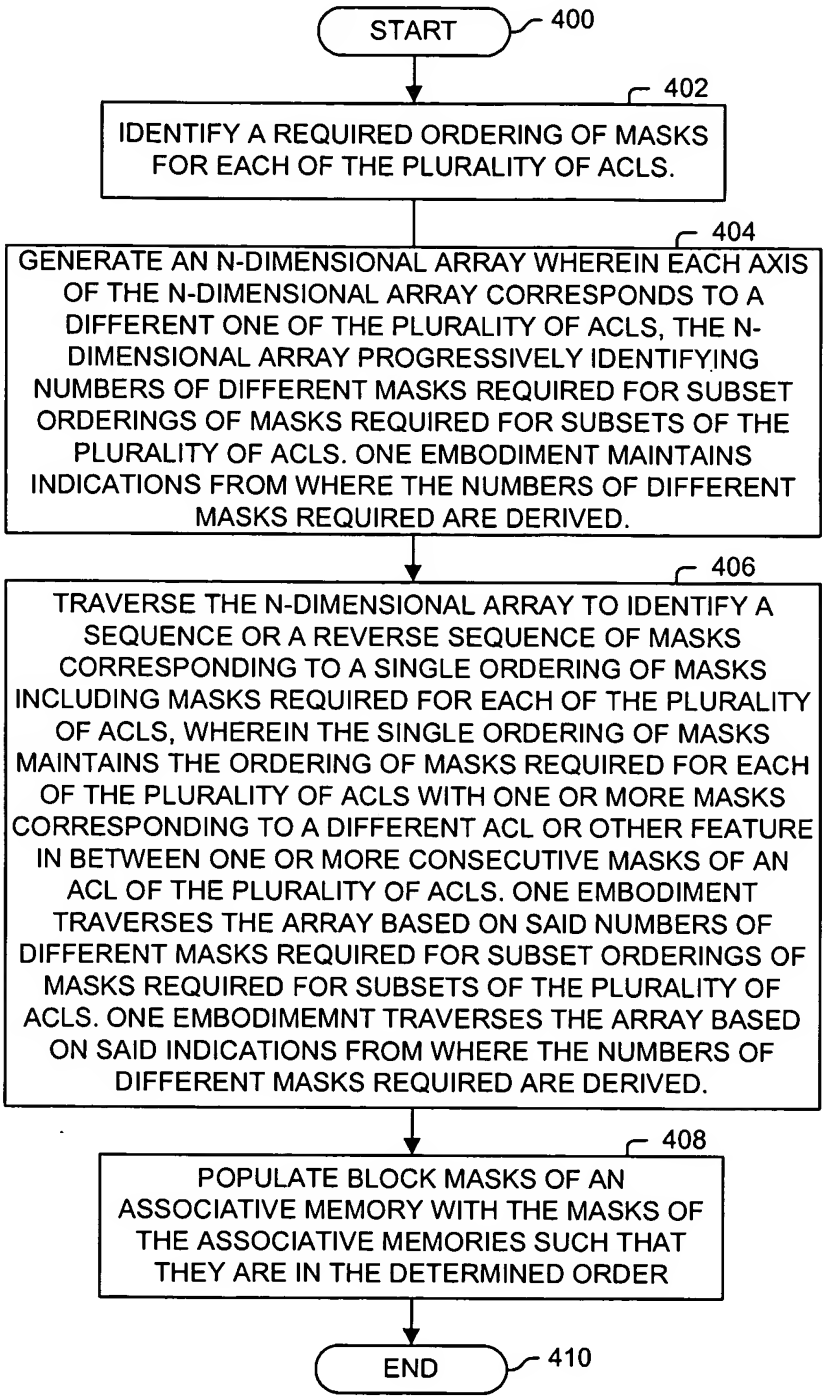

START
400
402
IDENTIFY A REQUIRED ORDERING OF MASKS FOR EACH OF THE PLURALITY OF ACLS.
404
GENERATE AN N-DIMENSIONAL ARRAY WHEREIN EACH AXIS OF THE N-DIMENSIONAL ARRAY CORRESPONDS TO A DIFFERENT ONE OF THE PLURALITY OF ACLS, THE N-DIMENSIONAL ARRAY PROGRESSIVELY IDENTIFYING NUMBERS OF DIFFERENT MASKS REQUIRED FOR SUBSET ORDERINGS OF MASKS REQUIRED FOR SUBSETS OF THE PLURALITY OF ACLS. ONE EMBODIMENT MAINTAINS INDICATIONS FROM WHERE THE NUMBERS OF DIFFERENT MASKS REQUIRED ARE DERIVED.
406
TRAVERSE THE N-DIMENSIONAL ARRAY TO IDENTIFY A SEQUENCE OR A REVERSE SEQUENCE OF MASKS CORRESPONDING TO A SINGLE ORDERING OF MASKS INCLUDING MASKS REQUIRED FOR EACH OF THE PLURALITY OF ACLS, WHEREIN THE SINGLE ORDERING OF MASKS MAINTAINS THE ORDERING OF MASKS REQUIRED FOR EACH OF THE PLURALITY OF ACLS WITH ONE OR MORE MASKS CORRESPONDING TO A DIFFERENT ACL OR OTHER FEATURE IN BETWEEN ONE OR MORE CONSECUTIVE MASKS OF AN ACL OF THE PLURALITY OF ACLS. ONE EMBODIMENT TRAVERSES THE ARRAY BASED ON SAID NUMBERS OF DIFFERENT MASKS REQUIRED FOR SUBSET ORDERINGS OF MASKS REQUIRED FOR SUBSETS OF THE PLURALITY OF ACLS. ONE EMBODIMEMNT TRAVERSES THE ARRAY BASED ON SAID INDICATIONS FROM WHERE THE NUMBERS OF DIFFERENT MASKS REQUIRED ARE DERIVED.
408
POPULATE BLOCK MASKS OF AN ASSOCIATIVE MEMORY WITH THE MASKS OF THE ASSOCIATIVE MEMORIES SUCH THAT THEY ARE IN THE DETERMINED ORDER
END
410

FIGURE 4A

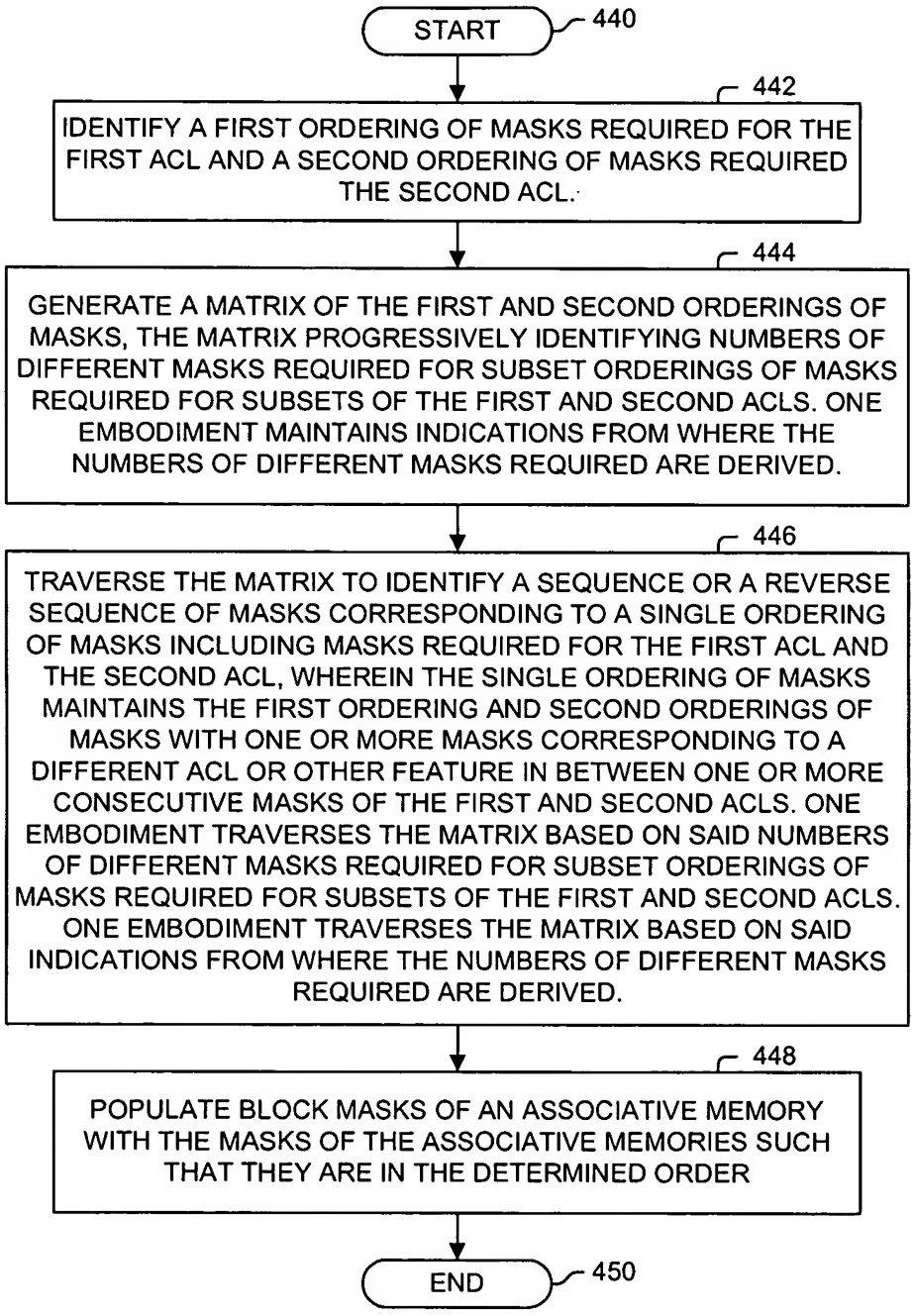

START
440
442
IDENTIFY A FIRST ORDERING OF MASKS REQUIRED FOR THE FIRST ACL AND A SECOND ORDERING OF MASKS REQUIRED THE SECOND ACL.
444
GENERATE A MATRIX OF THE FIRST AND SECOND ORDERINGS OF MASKS, THE MATRIX PROGRESSIVELY IDENTIFYING NUMBERS OF DIFFERENT MASKS REQUIRED FOR SUBSET ORDERINGS OF MASKS REQUIRED FOR SUBSETS OF THE FIRST AND SECOND ACLS. ONE EMBODIMENT MAINTAINS INDICATIONS FROM WHERE THE NUMBERS OF DIFFERENT MASKS REQUIRED ARE DERIVED.
446
TRAVERSE THE MATRIX TO IDENTIFY A SEQUENCE OR A REVERSE SEQUENCE OF MASKS CORRESPONDING TO A SINGLE ORDERING OF MASKS INCLUDING MASKS REQUIRED FOR THE FIRST ACL AND THE SECOND ACL, WHEREIN THE SINGLE ORDERING OF MASKS MAINTAINS THE FIRST ORDERING AND SECOND ORDERINGS OF MASKS WITH ONE OR MORE MASKS CORRESPONDING TO A DIFFERENT ACL OR OTHER FEATURE IN BETWEEN ONE OR MORE CONSECUTIVE MASKS OF THE FIRST AND SECOND ACLS. ONE EMBODIMENT TRAVERSES THE MATRIX BASED ON SAID NUMBERS OF DIFFERENT MASKS REQUIRED FOR SUBSET ORDERINGS OF MASKS REQUIRED FOR SUBSETS OF THE FIRST AND SECOND ACLS. ONE EMBODIMENT TRAVERSES THE MATRIX BASED ON SAID INDICATIONS FROM WHERE THE NUMBERS OF DIFFERENT MASKS REQUIRED ARE DERIVED.
448
POPULATE BLOCK MASKS OF AN ASSOCIATIVE MEMORY WITH THE MASKS OF THE ASSOCIATIVE MEMORIES SUCH THAT THEY ARE IN THE DETERMINED ORDER
END
450

FIGURE 4B

PSEUDO-CODE
500

```
Min_Masks(X, Y, m, n)
        V[0,0] = 0
        for  i = 0 to m
             for j = 0 to n
                 if(i != 0 and j != 0)
                        V[i, j]  = V[i-k1, j-k2]+1 where k1 and k2
                                                   are computed from eqn. 1
                        c[i,j].x = k1
                        c[i,j].y = k2
         return V, c

Find_Optimized_Acl(X, Y, m, n,  C)
        i=m
        j= n
        p=m+n
        while( i!=0 and j!=0)
                for k 1 to c[i,j].x
                        z_p = x_(i-k+1)
                        p= p -1
                for k 1 to c[i,j].y
                        z_p = y_(j-k+1)
                        p= p -1
                i = i - c[i,j].x
                j = j - c[i,j].y
        return Z
```

FIGURE 5

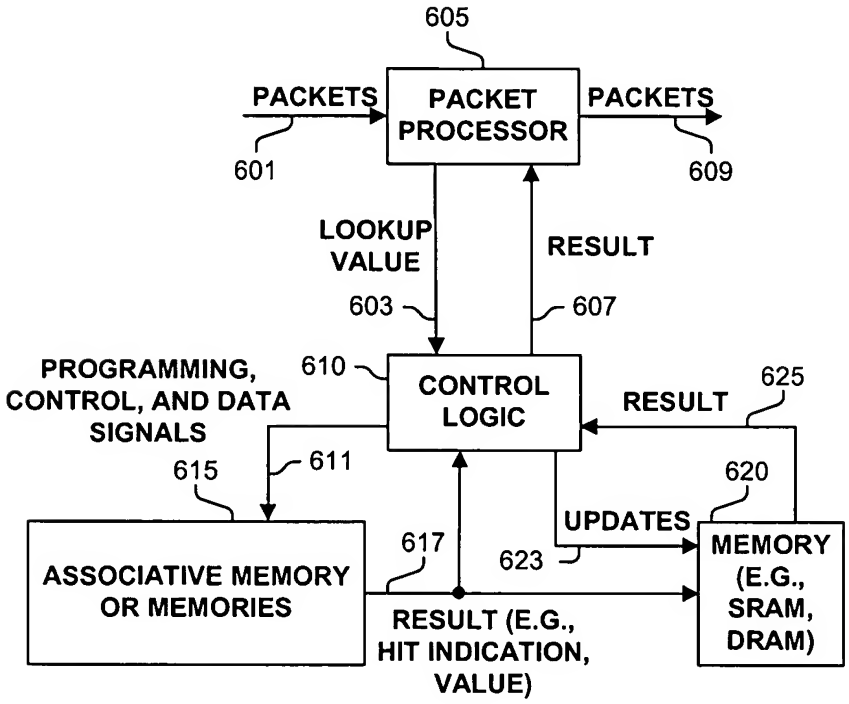

605
PACKETS
PACKET PROCESSOR
PACKETS
601
609
LOOKUP VALUE
RESULT
603
607
PROGRAMMING, CONTROL, AND DATA SIGNALS
610
CONTROL LOGIC
RESULT
625
615
611
620
UPDATES
617
623
ASSOCIATIVE MEMORY OR MEMORIES
MEMORY (E.G., SRAM, DRAM)
RESULT (E.G., HIT INDICATION, VALUE)

FIGURE 6A

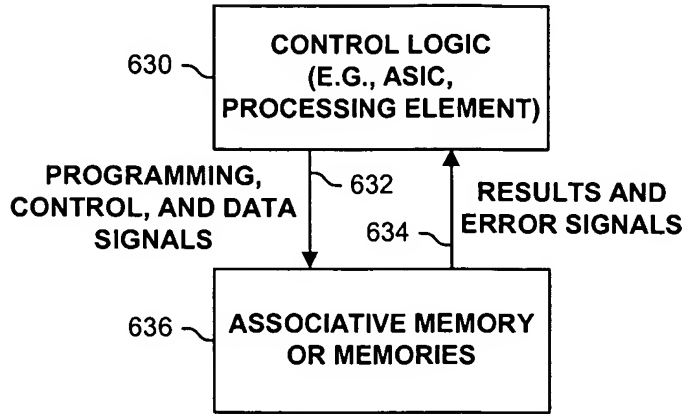


FIGURE 6B

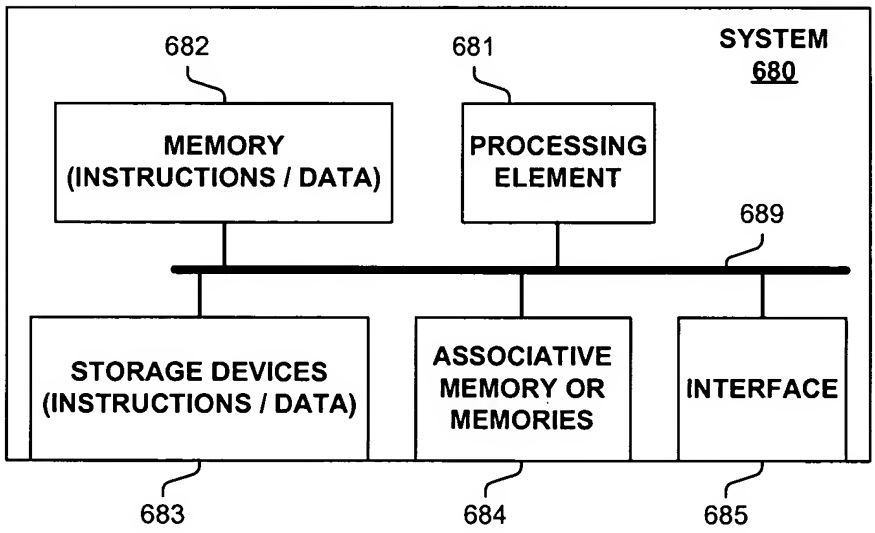


FIGURE 6C